

Preface

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Version 1.0

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Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Preface

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

About the Manual

The manual consists of the following:

Chapter 1	Describes features of the motherboard.
Introducing the Motherboard	Go to ➞ page 1
Chapter 2	Describes installation of motherboard components.
Installing the Motherboard	Go to ➞ page 7
Chapter 3	Provides information on using the BIOS Setup Utility.
Using BIOS	Go to ➞ page 25
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Chapter 1

Introducing the Motherboard

Introduction

Thank you for choosing the **A55F-M3** motherboard. This motherboard is a high performance, enhanced function motherboard that supports socket for FM1 for AMD A series processor for high-end business or personal desktop markets.

The motherboard is based on AMD A55 (Hudson D2) express chipset for best desktop platform. A55 is a single-chip, highly integrated, high performance Hyper-Transport peripheral controller, unmatched by any other single chip-device controller. The memory controller supports DDR3 memory DIMM frequencies of 1866^{*1}/1600/1333. It supports two DDR3 slots with maximum memory size of 32 GB. One PCI Express x16 slot, intended for Graphics Interface, is fully compliant to the PCI Express Gen2 (version 2.0). In addition, one PCI Express x1 slot and one PCI slot are supported.

It implements USB 2.0 interface, supporting up to eight USB 2.0 ports (four USB 2.0 ports and two USB 2.0 headers support additional four USB 2.0 ports). This motherboard integrates a Serial ATA host controller, supporting four SATA ports with maximum transfer rate up to 3 Gb/s each.

There is an full set of I/O ports in the rear panel, including PS/2 mouse and keyboard connectors, one D-sub (VGA) port, four USB 2.0 ports, one LAN port, three audio jacks for microphone, line-in and 6-ch line-out.



**1. Due to the limitation of chipset spec, it supports up to 1866 MHz for motherboard with a single DIMM per channel.*

Feature

Processor

This motherboard uses a socket FM1 that carries the following features:

- Accommodates AMD A series processors
- Supports CPU up to 100W TDP

Chipset

The AMD A55 (Hudson D2) chipset is based on an innovative and scalable architecture with proven reliability and performance.

- Supports one PCI-Express x16 Gen2 slot
- Supports one PCI Express x1 slot
- Compliant with PCI 2.3 specification at 33 MHz
- Supports four Serial ATA devices which speeds up to 3 Gb/s
- Integrated USB 2.0 Host Controller supporting up to eight USB 2.0 ports
- Supports integrated RAID 0,1 and RAID 10 functionality across all 6 ports (RAID 10 requires use of 4 or more SATA ports)
- Supports ACPI states S1, S3, S4 and S5

Memory

- Supports DDR3 1866*1/1600/1333 DDR3 SDRAM with Dual-channel architecture
- Accommodates two unbuffered DIMMs
- Up to 16 GB per DIMM with maximum memory size up to 32 GB



**1. Due to the limitation of chipset spec, it supports up to 1866 MHz for motherboard with a single DIMM per channel.*

Audio

- 5.1+2 Channel High Definition Audio Codec
- Meets Microsoft WLP3.x (Windows Logo Program) audio requirements
- All DACs supports 44.1k/48k/96k/192kHz sample rate
- Software selectable 2.5V/3.2V/4.0V VREFOUT
- Direct Sound 3D™ compatible
- Power Support: Digital: 3.3V; Analog: 5.0V

Onboard LAN (Optional)

The onboard LAN provides the following features:

<ul style="list-style-type: none"> • Supports PCI Express™ 1.1 • Integrated 10/100/1000 transceiver • Wake-on-LAN and remote wake-up support
<ul style="list-style-type: none"> • Supports PCI Express™ 1.1 • Integrated 10/100 transceiver • Wake-on-LAN and remote wake-up support

Expansion Options

The motherboard comes with the following expansion options:

- One PCI Express x16 slot for Graphics Interface
- One PCI Express x1 slot
- One 32-bit PCI v2.3 compliant slot
- Four 7-pin SATA connectors

Integrated I/O

The motherboard has a full set of I/O ports and connectors:

- PS/2 keyboard and PS/2 mouse connectors
- Four USB 2.0 ports
- One D-sub (VGA) port
- One LAN port
- Audio jacks for microphone, line-in and 6-ch line-out

BIOS Firmware

The motherboard uses AMI BIOS that enables users to configure many system features including the following:

- Power management
- Wake-up alarms
- CPU parameters
- CPU and memory timing


The firmware can also be used to set parameters for different processor clock speeds.



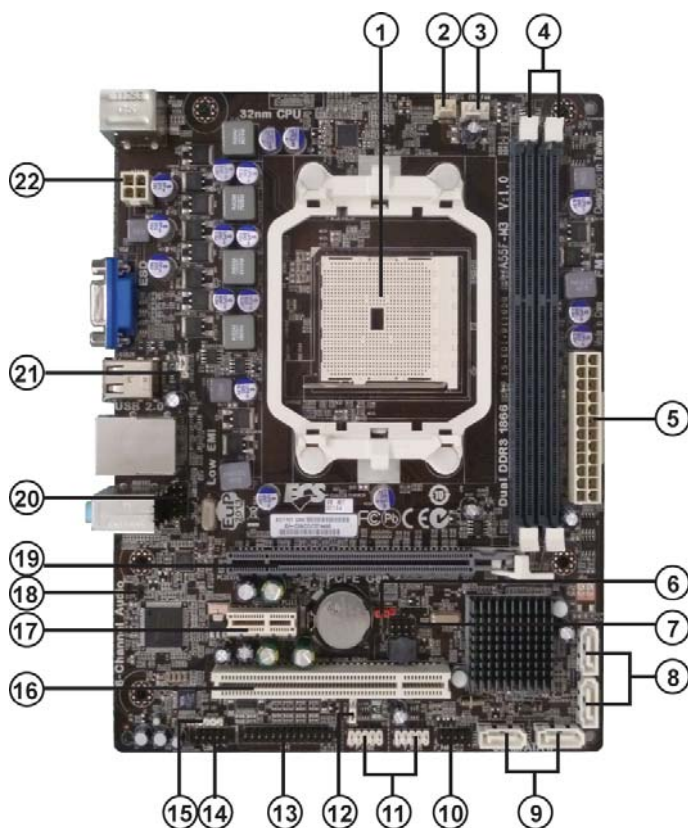
1. Some hardware specifications and software items are subject to change without prior notice.

2. Due to chipset limitation, we recommend that motherboard be operated in the ambience between 0 and 50°C.

Specifications

CPU	<ul style="list-style-type: none"> • FM1 for AMD A series processors • Supports CPU up to 100W TDP
Chipset	<ul style="list-style-type: none"> • AMD A55 (Hudson D2)
Memory	<ul style="list-style-type: none"> • Dual-channel DDR3 memory architecture • 2 x 240-pin DDR3 DIMM sockets support up to 32 GB • Supports DDR3 DDR3 1866*/1600/1333 SDRAM
	<p><i>*1. Due to the limitation of chipset spec, it supports up to 1866 MHz for motherboard with a single DIMM per channel.</i></p>
Expansion Slots	<ul style="list-style-type: none"> • 1 x PCI Express Gen2 x16 slot • 1 x PCI Express x1 slot • 1 x PCI slot
Storage	<ul style="list-style-type: none"> • Supported by AMD A55 (Hudson D2) - 4 x Serial ATA 3.0 Gb/s Host Controllers
Audio	<ul style="list-style-type: none"> • VT1705CE 6-Ch High Definition audio CODEC
LAN	<ul style="list-style-type: none"> • Realtek 8111E VL Gigabit LAN • Realtek 8105E VL 10/100 LAN (optional)
Rear Panel I/O	<ul style="list-style-type: none"> • 1 x D-sub (VGA) port • 1 x PS/2 keyboard & PS/2 mouse connectors • 4 x USB 2.0 ports • 1 x RJ45 LAN port • 1 x Audio port (Line in, microphone in and line out)
Internal I/O Connectors & Headers	<ul style="list-style-type: none"> • 1 x 24-pin ATX Power Supply connector • 1 x 4-pin ATX Power Supply connector • 1 x 4-pin CPU_FAN connector • 1 x 3-pin SYS_FAN connector • 2 x USB 2.0 headers support additional 4 USB 2.0 ports • 4 x Serial ATA 3Gb/s connectors • 1 x COM header • 1 x LPT header • 1 x Front panel audio header • 1 x Case Open header • 1 x Speaker header • 1 x Clear CMOS header • 1 x SPDIF out header • 1 x Front panel USB power select jumper • 1 x Rear USB/PS2 power select jumper
System BIOS	<ul style="list-style-type: none"> • AMI BIOS with 16Mb SPI Flash ROM • Supports Multi-language BIOS Utility • Supports ECS M.I.B III Utility
AP support	<ul style="list-style-type: none"> • Supports eDLU/eSF/eBLU
Form Factor	<ul style="list-style-type: none"> • MATX Size, 230mm x 180mm

Motherboard Components



Introducing the Motherboard

Table of Motherboard Components

LABEL	COMPONENTS
1. CPU Socket	FM1 for AMD A series processors
2. SYS_FAN	System cooling fan connector
3. CPU_FAN	CPU cooling fan connector
4. DDR3_1~2	240-pin DDR3 SDRAM slots
5. ATX_POWER	Standard 24-pin ATX power connector
6. CLR_CMOS	Clear CMOS jumper
7. SPK	Speaker header
8. SATA3~4	Serial ATA 3.0 Gb/s connectors
9. SATA1~2	Serial ATA 3.0 Gb/s connectors
10. F_PANEL	Front panel switch/LED header
11. F_USB1~2	Front panel USB 2.0 header
12. USBPWR_F	Front panel USB power select jumper
13. LPT	Onboard parallel port header
14. COM	Onboard serial port header
15. SPDIFO	SPDIF out header
16. PCI	32-bit add-on card slot
17. PCIE1	PCI Express x1 slot
18. CASE	Case open header
19. PCIEX16	PCI Express slot for graphics interface
20. F_AUDIO	Front panel audio header
21. USBPWR_R	Rear USB/PS2 power select jumper
22. ATX12V	4-pin +12V power connector

This concludes Chapter 1. The next chapter explains how to install the motherboard.

Chapter 2

Installing the Motherboard

Safety Precautions

- Follow these safety precautions when installing the motherboard
- Wear a grounding strap attached to a grounded device to avoid damage from static electricity
- Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard
- Leave components in the static-proof bags they came in
- Hold all circuit boards by the edges. Do not bend circuit boards

Choosing a Computer Case

There are many types of computer cases on the market. The motherboard complies with the specifications for the Micro ATX system case. Some features on the motherboard are implemented by cabling connectors on the motherboard to indicators and switches on the system case. Make sure that your case supports all the features required. Make sure that your case has sufficient power and space for all drives that you intend to install.

Most cases have a choice of I/O templates in the rear panel. Make sure that the I/O template in the case matches the I/O ports installed on the rear edge of the motherboard.

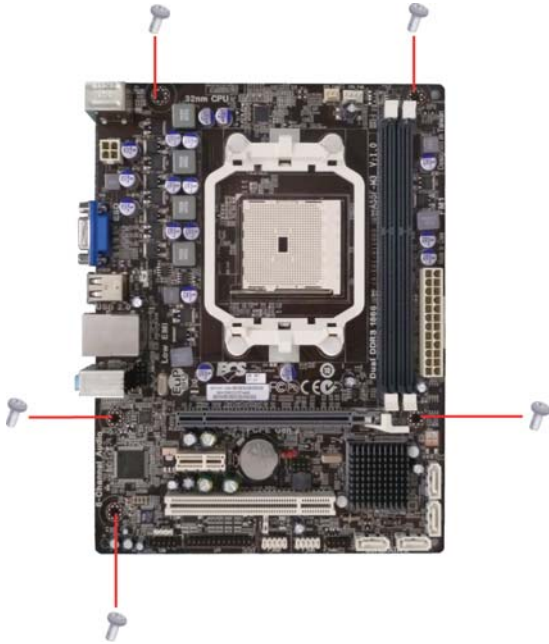
This motherboard carries an MATX form factor of 230 X 180 mm. Choose a case that accommodates this form factor.

Installing the Motherboard in a Case

Refer to the following illustration and instructions for installing the motherboard in a case.

Most system cases have mounting brackets installed in the case, which correspond the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws.

Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your motherboard.



Do not over-tighten the screws as this can stress the motherboard.

Checking Jumper Settings

This section explains how to set jumpers for correct configuration of the motherboard.

Setting Jumpers

Use the motherboard jumpers to set system configuration options. Jumpers with more than one pin are numbered. When setting the jumpers, ensure that the jumper caps are placed on the correct pins.

The illustrations show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is **SHORT**. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is **OPEN**.



SHORT



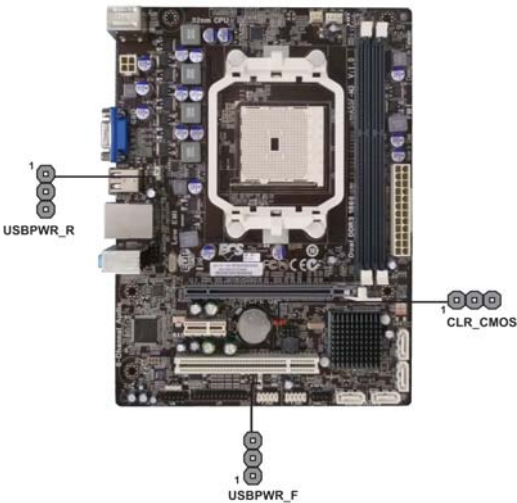
OPEN

This illustration shows a 3-pin jumper. Pins 1 and 2 are **SHORT**.






Checking Jumper Settings

The following illustration shows the location of the motherboard jumpers. Pin 1 is labeled.



Jumper Settings

Jumper	Type	Description	Setting (default)	
CLR_CMOS	3-pin	Clear CMOS	1-2: NORMAL 2-3: CLEAR CMOS Before clearing the CMOS, make sure to turn off the system.	 CLR_CMOS
USBPWR_F	3-pin	Front Panel USB Power Select Jumper	1-2: VCC 2-3: 5VSB	 USBPWR_F
USBPWR_R	3-pin	Rear USB PS/2 Power Select Jumper	1-2: VCC 2-3: 5VSB	 USBPWR_R



- 1. To avoid the system unstability after clearing CMOS, we recommend users to enter the main BIOS setting page to “Load Optimal Defaults” and then “Save Changes and Exit”.
- 2. Make sure the power supply provides enough 5VSB voltage before selecting the 5VSB function.
- 3. It is required that users place the USBPWR_F1 & USBPWR_R1 cap onto 2-3 pin rather than 1-2 pin as default if you want to wake up the computer by USB/PS2 KB/Mouse.

Installing the Motherboard

Installing Hardware

Installing the Processor



*Caution: When installing a CPU heatsink and cooling fan make sure that you **DO NOT** scratch the motherboard or any of the surface-mount resistors with the clip of the cooling fan. If the clip of the cooling fan scrapes across the motherboard, you may cause serious damage to the motherboard or its components.*

On most motherboards, there are small surface-mount resistors near the processor socket, which may be damaged if the cooling fan is carelessly installed.

Avoid using cooling fans with sharp edges on the fan casing and the clips. Also, install the cooling fan in a well-lit work area so that you can clearly see the motherboard and processor socket.

Before installing the Processor

This motherboard automatically determines the CPU clock frequency and system bus frequency for the processor. You may be able to change these settings by making changes to jumpers on the motherboard, or changing the settings in the system Setup Utility. We strongly recommend that you do not over-clock processors or other components to run faster than their rated speed.



Warning:

1. Over-clocking components can adversely affect the reliability of the system and introduce errors into your system. Over-clocking can permanently damage the motherboard by generating excess heat in components that are run beyond the rated limits.

2. Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.

This motherboard has a socket FM1 processor socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

CPU Installation Procedure

The following illustration shows CPU installation components.

- 1 Install your CPU. Pull up the lever away from the socket and lift up to 90-degree angle.
- 2 Locate the CPU cut edge (the corner with the pin hold noticeably missing). Align and insert the CPU correctly.
- 3 Press the lever down and apply thermal grease on top of the CPU.
- 4 Put the CPU Fan down on the retention module and snap the four retention legs of the cooling fan into place.
- 5 Flip the levers over to lock the heat sink in place and connect the CPU cooling Fan power cable to the CPUFAN connector. This completes the installation.



* For reference only



To achieve better airflow rates and heat dissipation, we suggest that you use a high quality fan with 4800 rpm at least. CPU fan and heatsink installation procedures may vary with the type of CPU fan/heatsink supplied. The form and size of fan/heatsink may also vary.

Installing Memory Modules

This motherboard accommodates two memory modules. It can support two 240-pin DDR3 1866*/1600/1333. The total memory capacity is 32 GB.

DDR3 SDRAM memory module table

Memory module	Memory Bus
DDR3 1333	667 MHz
DDR3 1600	800 MHz
DDR3 1866	933 MHz

You must install at least one module in any of the two slots. Each module can be installed with 16 GB of memory.



Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.



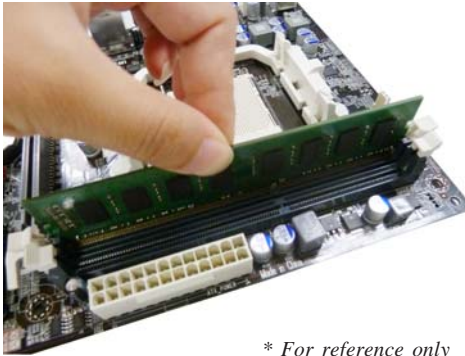
*1. Due to the limitation of chipset spec, it supports up to 1866 MHz for motherboard with a single DIMM per channel.

Installing the Motherboard

Installation Procedure

Refer to the following to install the memory modules.

- 1 This motherboard supports unbuffered DDR3 SDRAM only.
- 2 Push the latches on each side of the DIMM slot down.
- 3 Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.
- 4 Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.
- 5 Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.
- 6 Install any remaining DIMM modules.

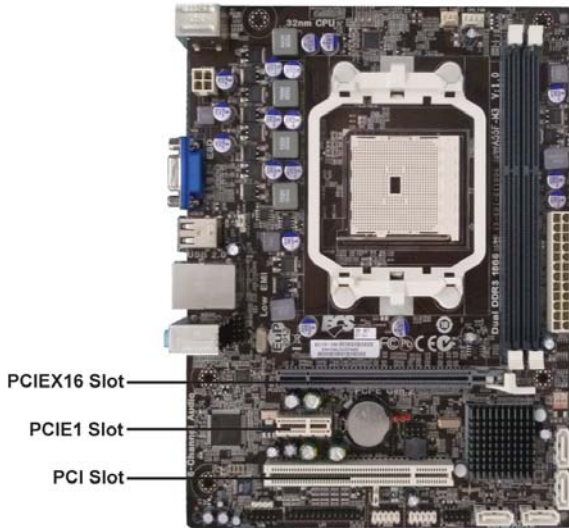


** For reference only*

Expansion Slots

Installing Add-on Cards

The slots on this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.



PCIEX16 Slot

The PCI Express x16 slot is used to install an external PCI Express graphics card that is fully compliant to the PCI Express Gen2 (version 2.0).

PCIEX1 Slot

The PCI Express x1 slot is fully compliant to the PCI Express Gen2 (version 2.0).

PCI Slot

This motherboard is equipped with one standard PCI slot. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slot on this board is PCI v2.3 compliant.



Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

Installing the Motherboard

Follow these instructions to install an add-on card:

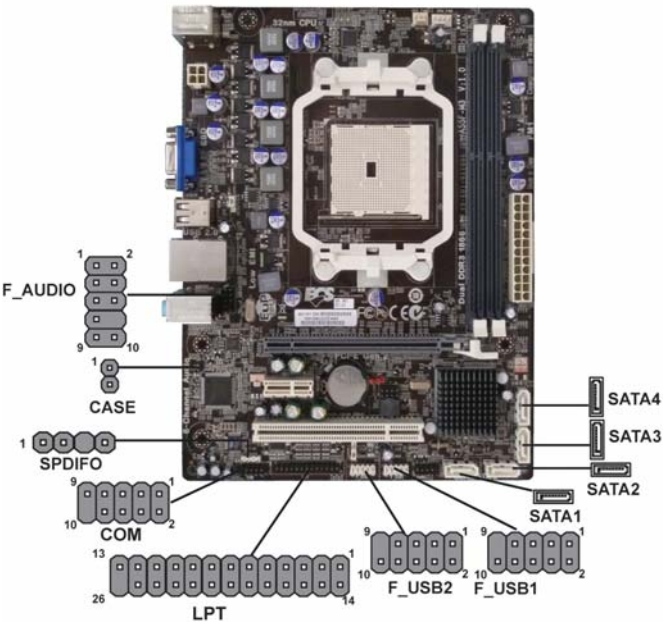
- 1 Remove a blanking plate from the system case corresponding to the slot you are going to use.
- 2 Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.
- 3 Secure the metal bracket of the card to the system case with a screw.



** For reference only*

Connecting Optional Devices

Refer to the following for information on connecting the motherboard’s optional devices:



SATA1~4: Serial ATA connectors

These connectors are used to support the Serial ATA II devices, simpler disk drive cabling and easier PC assembly. It eliminates limitation of the current Parallel ATA interface. But maintains register compatibility and software compatibility with Parallel ATA.

Pin	Signal Name	Pin	Signal Name
1	Ground	2	TX+
3	TX-	4	Ground
5	RX-	6	RX+
7	Ground	-	-

F_USB1~2: Front Panel USB 2.0 headers

The motherboard has four USB 2.0 ports installed on the rear edge I/O port array. Additionally, some computer cases have USB 2.0 ports at the front of the case. If you have this kind of case, use auxiliary USB 2.0 connector to connect the front-mounted ports to the motherboard.

Pin	Signal Name	Function
1	USBPWR	Front Panel USB Power
2	USBPWR	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	Key	No pin
10	USB_FP_OC0	Overcurrent signal



Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

F_AUDIO: Front Panel Audio header

This header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal Name	Pin	Signal Name
1	PORT1L	2	AUD_GND
3	PORT1R	4	PRESENCE#
5	PORT2R	6	SENSE1_RETURN
7	SENSE_SEND	8	KEY
9	PORT2L	10	SENSE2_RETURN

CASE: Chassis Intrusion Detect Header

This detects if the chassis cover has been removed. This function needs a chassis equipped with intrusion detection switch and needs to be enabled in BIOS.

Pin 1-2	Function
Short	Chassis cover is removed
Open	Chassis cover is closed

SPDIFO: SPDIF out header

This is an optional header that provides an S/PDIF (Sony/Philips Digital Interface) output to digital multimedia device through optical fiber or coaxial connector.

Pin	Signal Name	Function
1	SPDIF	SPDIF digital output
2	+5VA	5V analog Power
3	Key	No pin
4	GND	Ground

COM: Onboard serial port header

Connect a serial port extension bracket to this header to add a serial port to your system.

Pin	Signal Name	Function
1	DCDB	Data Carrier Detect
2	SINB	Serial Input
3	SOUTB	UART B Serial Output
4	DTRB	UART B Data Terminal Ready
5	GND	Ground
6	DSRB	Data Set Ready
7	RTSB	UART B Request to Send
8	CTSB	Clear to Send
9	RI	Ring Indicator
10	Key	No pin

LPT: Onboard parallel port Header

This is a header that can be used to connect to the printer, scanner or other devices.

Pin	Signal Name	Pin	Signal Name
1	STROBE	14	AFD
2	PD0	15	ERROR
3	PD1	16	INIT
4	PD2	17	SLCT
5	PD3	18	Ground
6	PD4	19	Ground
7	PD5	20	Ground
8	PD6	21	Ground
9	PD7	22	Ground
10	ACK	23	Ground
11	BUSK	24	Ground
12	PE	25	Ground
13	SLCT	26	Key

Installing a SATA Hard Drive

This section describes how to install a SATA hard drive.

About SATA Connectors

Your motherboard features four SATA connectors supporting a total of four drives. SATA refers to Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation. Locate the SATA connectors on the motherboard and follow the illustration below to install the SATA hard drives.

Installing Serial ATA Hard Drives

To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with an SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.



SATA cable (optional)



SATA power cable (optional)

Refer to the illustration below for proper installation:

- 1 Attach either cable end to the connector on the motherboard.
- 2 Attach the other cable end to the SATA hard drive.
- 3 Attach the SATA power cable to the SATA hard drive and connect the other end to the power supply.



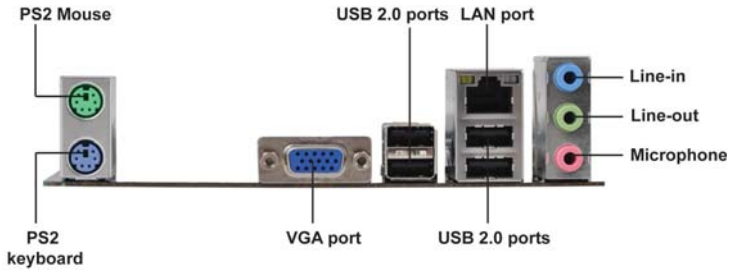
* For reference only



This motherboard supports the “Hot-Plug” function.

Connecting I/O Devices

The backplane of the motherboard has the following I/O ports:

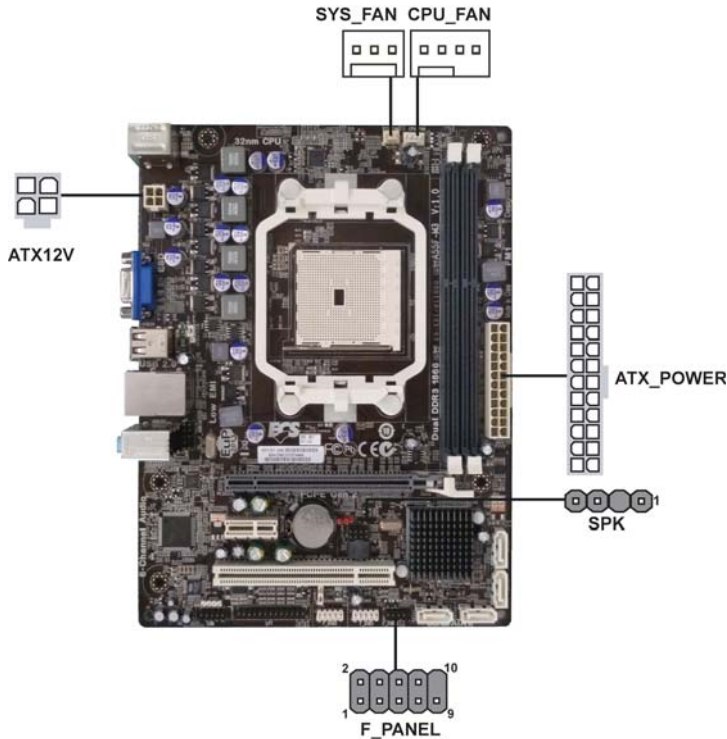


- | | |
|----------------------|---|
| PS2 Mouse | Use the upper PS/2 port to connect a PS/2 pointing device. |
| PS2 Keyboard | Use the lower PS/2 port to connect a PS/2 keyboard. |
| VGA Port | Connect your monitor to the VGA port. |
| LAN Port | Connect an RJ-45 jack to the LAN port to connect your computer to the Network. |
| USB 2.0 Ports | Use the USB 2.0 ports to connect USB 2.0 devices. |
| Audio Ports | Use the three audio ports to connect audio devices. The first jack is for stereo line-in signal. The second jack is for stereo line-out signal. The third jack is for microphone. |

Connecting Case Components

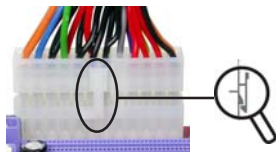
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

- 1 Connect the CPU cooling fan cable to **CPU_FAN**.
- 2 Connect the standard power supply connector to **ATX_POWER**.
- 3 Connect the case switches and indicator LEDs to the **F_PANEL**.
- 4 Connect the system cooling fan connector to **SYS_FAN**.
- 5 Connect the auxiliary case power supply connector to **ATX12V**.
- 6 Connect the case speaker cable to **SPK**.



Connecting 24-pin power cable

The ATX 24-pin connector allows you to connect to ATX v2.x power supply.



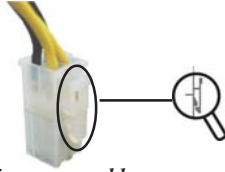
24-pin power cable

With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATX match perfectly.



Connecting 4-pin power cable

The ATX12V4P power connector is used to provide power to the CPU.



4-pin power cable

When installing 4-pin power cable, the latches of power cable and the ATX12V4P match perfectly.

CPU_FAN: Cooling FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor
4	PWM	CPU FAN control



Users please note that the fan connector supports the CPU cooling fan of 1.1A~2.2A (26.4W max.) at +12V.

ATX_POWER: ATX 24-pin Power Connector

Pin	Signal Name	Pin	Signal Name
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	Ground	15	COM
4	+5V	16	PS_ON
5	Ground	17	COM
6	+5V	18	COM
7	Ground	19	COM
8	PWRGD	20	-5V
9	+5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	COM

SYS_FAN: FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor

ATX12V: ATX 12V Power Connector

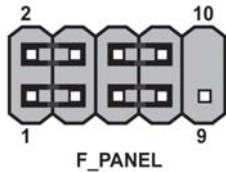
Pin	Signal Name
1	Ground
2	Ground
3	+12V
4	+12V

SPK: Internal speaker

Pin	Signal Name
1	VCC
2	Key
3	GND
4	Signal

Front Panel Header

The front panel header (F_PANEL) provides a standard set of switch and LED headers commonly found on ATX or Micro ATX cases. Refer to the table below for information:



Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED (+)	2	FP PWR/SLP	*MSG LED (+)
3	HD_LED_N	Hard disk LED (-)	4	FP PWR/SLP	*MSG LED (-)
5	RST_SW_N	Reset Switch (-)	6	PWR_SW_P	Power Switch (+)
7	RST_SW_P	Reset Switch (+)	8	PWR_SW_N	Power Switch (-)
9	RSVD	Reserved	10	Key	No pin

** MSG LED (dual color or single color)*

Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power/Sleep/Message waiting LED

Connecting pins 2 and 4 to a single or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

Supporting the reset function requires connecting pin 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

This concludes Chapter 2. The next chapter covers the BIOS.

Memo

Chapter 3

Using BIOS

About the Setup Utility

The computer uses the latest “American Megatrends Inc.” BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system’s configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power Management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL to enter SETUP

Press the delete key to access BIOS Setup Utility.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
<div>MainAdvancedChipsetM.I.B.IIIBootSecuritySave & Exit</div>		
BIOS Information		Choose the system default language
System Language	[English]	
System Date	[Tue 07/19/2011]	→ ←: Select Screen ↑↓/Click: Select Item Enter/Dbl Click : Select +/- : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC/Right Click: Exit
System Time	[16:52:28]	
Version 2.13.1216. Copyright (C) 2011 American Megatrends, Inc.		

Resetting the Default CMOS Values

When powering on for the first time, the POST screen may show a “CMOS Settings Wrong” message. This standard message will appear following a clear CMOS data at factory by the manufacturer. You simply need to Load Default Settings to reset the default CMOS values.

Note: Changes to system hardware such as different CPU, memories, etc. may also trigger this message.



Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ►) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

Using BIOS

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ►.



The default BIOS setting for this motherboard apply for most conditions with optimum performance. We do not suggest users change the default values in the BIOS setup and take no responsibility to any damage caused by changing the BIOS settings.

BIOS Navigation Keys

The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
↑↓←→	Scrolls through the items on a menu
+/-	Modifies the selected field's values
Enter	Select
F1	General Help
F2	Previous Value
F3	Optimized Defaults
F4	Save & Exit



For the purpose of better product maintenance, the manufacture reserves the right to change the BIOS items presented in this manual. The BIOS setup screens shown in this chapter are for reference only and may differ from the actual BIOS. Please visit the manufacture's website for updated manual.

Main Menu

When you enter the BIOS Setup program, the main menu appears, giving you an overview of the basic system information. Select an item and press <Enter> to display the submenu.

Apio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Main Advanced Chipset M.I.B.III Boot Security Save & Exit

BIOS Information
 System Language (English) System Language
 System Date [Tue 0] English
 System Time [16:52] Español
 Deutsch
 Русский
 简体中文
 한국어
 日本語
 Italiano
 Português
 繁體中文

Choose the system default language
 → ←: Select Screen
 ↑↓/Click: Select Item
 Enter/DbI Click : Select
 +/- : Change Opt.
 F1: General Help
 F2: Previous Values
 F3: Optimized Defaults
 F4: Save & Exit
 ESC/Right Click: Exit

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System Language (English)

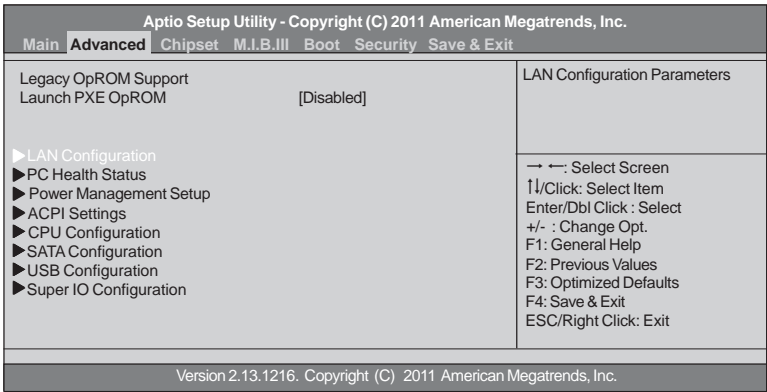
This item is used to set system language.

Date & Time

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

Advanced Menu

The Advanced menu items allow you to change the settings for the CPU and other system.

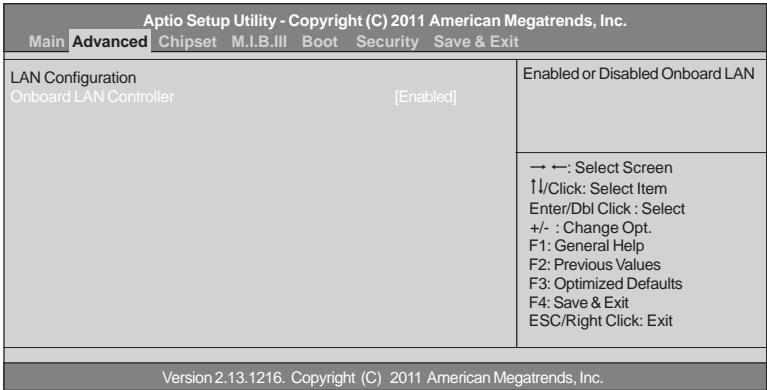


Launch PXE OpROM (Disabled)

The item enables or disables launch PXE Option ROM.

LAN Configuration

The item in the menu shows the LAN-related information that the BIOS automatically detects.



Onboard LAN Controller (Enabled)

Use this item to enable or disable the Onboard LAN.

Press <Esc> to return to the Advanced Menu page.

PC Health Status

On motherboards support hardware monitoring, this item lets you monitor the parameters for critical voltages, temperatures and fan speeds.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Main	Advanced	Chipset M.I.B.III Boot Security Save & Exit
▶ Smart Fan Function		
CPU Tct1	: +38	→ ←: Select Screen ↑↓/Click: Select Item Enter/DbI Click : Select +/- : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC/Right Click: Exit
CPU FAN	: N/A	
SYS FAN	: 4672 RPM	
CPU Vcore	: +1.200 V	
DIMM Voltage	: +1.544 V	
SB Voltage	: +1.088 V	
Version 2.13.1216. Copyright (C) 2011 American Megatrends, Inc.		

▶ Smart Fan Function

Scroll to this item and press <Enter> to view the following screen:

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Main	Advanced	Chipset M.I.B.III Boot Security Save & Exit
CPU Smart Fan Control	[Enabled]	
Smart Fan Mode	[Normal]	
High Limit Temperature	60	→ ←: Select Screen ↑↓/Click: Select Item Enter/DbI Click : Select +/- : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC/Right Click: Exit
Low Limit Temperature	37	
High Limit PWM	200	
Low Limit PWM	56	
Version 2.13.1216. Copyright (C) 2011 American Megatrends, Inc.		

CPU Smart Fan Control (Enabled)

This item enables you to define the CPU temperature by smartly adjusting the CPU Fan. When it is set at certain temperature, the CPU Fan PWM value will change accordingly.

Smart Fan Mode (Normal)

This item allows you to select the fan mode (Normal, Quiet, Silent, or Manual) for a better operation environment. If you choose Normal mode, the fan speed will be auto adjusted depending on the CPU temperature. If you choose Quite mode, the fan speed will be auto minimized for quiet environment. If you choose Silent mode, the fan speed will be auto restricted to make system more quietly. If you choose Manual mode, the fan speed will be adjust depending on users' parameters.

Press <Esc> to return to the PC Health Status page.

System Component Characteristics

These items display the monitoring of the overall inboard hardware health events, such as System & CPU temperature, CPU & DIMM voltage, CPU & system fan speed,... etc.

- CPU Tct1
- CPU FAN
- SYS FAN
- CPU Vcore
- DIMM Voltage
- SB Voltage

Press <Esc> to return to the Advanced Menu page.

Power Management Setup

This page sets up some parameters for system power management operation.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Main	Advanced	Chipset M.I.B.III Boot Security Save & Exit
Power Management Setup		About Resume by RING
Resume By RING	[Disabled]	→ ←: Select Screen ↑↓/Click: Select Item Enter/Dbl Click : Select +/- : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC/Right Click: Exit
Resume By PME	[Disabled]	
Resume By USB 1.x/2.0 (S3)	[Disabled]	
Resume By PS2 KB (S3)	[Disabled]	
Resume By PS2 MS (S3)	[Disabled]	
EUP Function	[Enabled]	
Power LED Type	[Dual Color LED]	
Version 2.13.1216. Copyright (C) 2011 American Megatrends, Inc.		

Resume By RING (Disabled)

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

Resume By PME (Disabled)

This item specifies whether the system will be awakened from power saving modes when activity or input signal of the specified hardware peripheral or component is detected.

Resume By USB 1.x/2.0 (S3) (Disabled)

This item allows you to enable/disable the USB 1.x/2.0 device wakeup function from S3 mode.

Resume By PS2 KB (S3) (Disabled)

This item enables or disables you to allow PS2 keyboard activity to awaken the system from power saving mode.

Resume By PS2 MS (S3) (Disabled)

This item enables or disables you to allow PS2 mouse activity to awaken the system from power saving mode.

EUP Support (Enabled)

This item allows user to enable or disable EUP support.

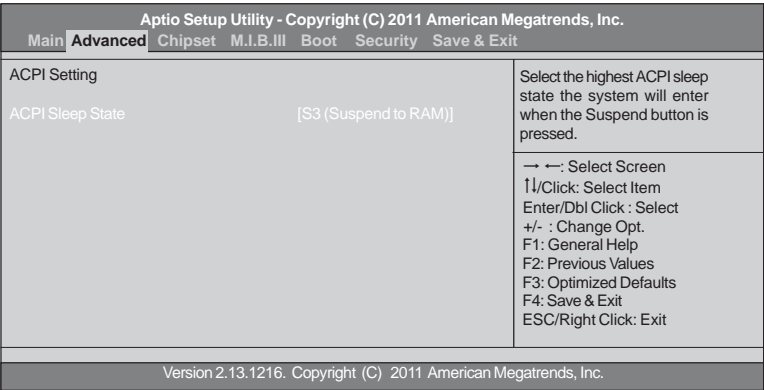
Power LED Type (Dual Color LED)

This item shows the type of the Power LED.

Press <Esc> to return to the Advanced Menu page.

ACPI Configuration

The item in the menu shows the highest ACPI sleep state when the system enters suspend.



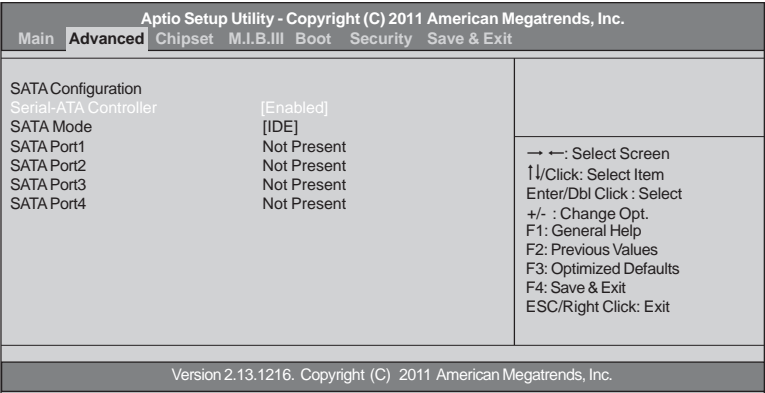
ACPI Sleep State (S3(Suspend to RAM))

This item allows user to enter the ACPI S3 (Suspend to RAM) Sleep State(default).

Press <Esc> to return to the Advanced Menu page.

SATA Configuration

Use this item to show the mode of serial ATA configuration options.



Serial-ATA Controller (Enabled)

Use this item to select the Serial-ATA controller options: Disabled, Compatible, Enabled.

SATA Mode (IDE)

Use this item to select SATA mode.

SATA Port1~4 (Not Present)

This motherboard supports four SATA channels and each channel allows one SATA device to be installed. Use these items to configure each device on the SATA channel, and each channel allows one SATA device to be installed. Use these items to configure each device on the SATA channel.

Press <Esc> to return to the Advanced Menu page.

USB Configuration

Use this item to show the information of USB configuration.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Main Advanced Chipset M.I.B.I.L. Boot Security Save & Exit		
USB Configuration		
All USB Devices	[Enabled]	→ ←: Select Screen ↑↓/Click: Select Item Enter/Dbf Click : Select +/- : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC/Right Click: Exit
Legacy USB Support	[Enabled]	
Version 2.13.1216. Copyright (C) 2011 American Megatrends, Inc.		

All USB Devices (Enabled)

Use this item to enable or disable all USB devices.

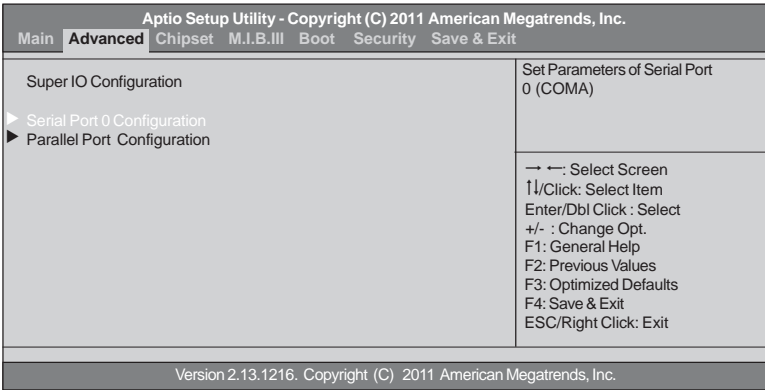
Legacy USB Support (Enabled)

Use this item to enable or disable support for legacy USB devices.

Press <Esc> to return to the Advanced Menu page.

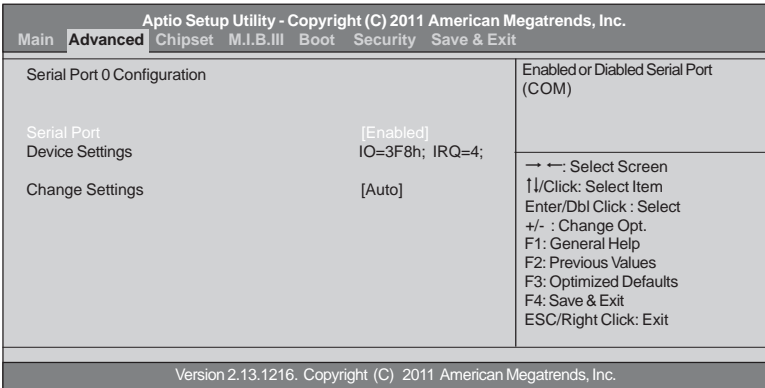
Super IO Configuration

Use this item to show the information of Super IO configuration.



► Serial Port 0 Configuration

Scroll to this item and press <Enter> to view the following screen:



Serial Port (Enabled)

This item allows you to enable or disable serial port.

Device Settings (IO=3F8h; IRQ=4)

This item shows the information of the device settings.

Change Settings (Auto)

Use this item to change device settings.

Press <Esc> to return to the Super IO Configuration page.

► **Parallel Port Configuration**

Scroll to this item and press <Enter> to view the following screen:

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Main	Advanced	Chipset M.I.B.III Boot Security Save & Exit
Parallel Port Configuration		Enable or Disable Parallel Port (LPT/LPTE)
Parallel Port	[Enabled]	→ ←: Select Screen ↑↓/Click: Select Item Enter/Dbl Click : Select +/- : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC/Right Click: Exit
Device Settings	IO=378h; IRQ=5;	
Change Settings	[Auto]	
Device Mode	[Standard and Bi-di ...]	
Version 2.13.1216. Copyright (C) 2011 American Megatrends, Inc.		

Parallel Port (Enabled)

This item allows you to enable or disable parallel port.

Device Settings (IO=378h; IRQ=5;)

This item shows the information of the device settings.

Change Settings (Auto)

Use this item to change device settings.

Device Mode (Standard and Bi-di ...)

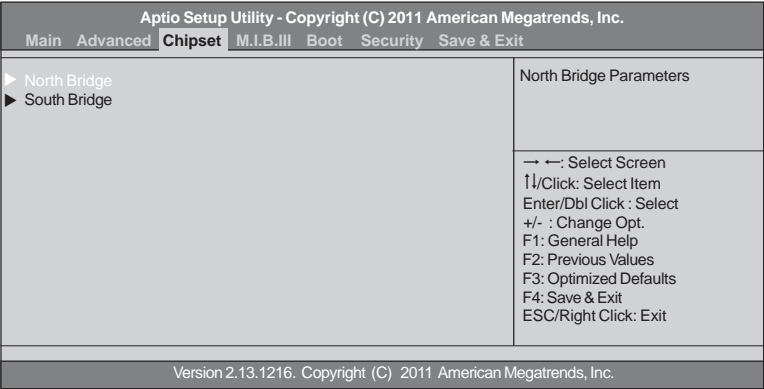
This item shows the information of the device mode.

Press <Esc> to return to the Super IO Configuration page.

Press <Esc> to return to the Advanced Menu page.

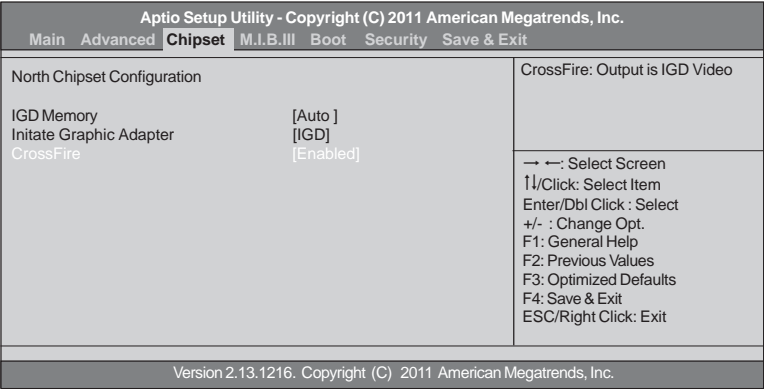
Chipset Menu

The chipset menu items allow you to change the settings for the North Bridge chipset, South Bridge chipset and other system.



► North Bridge

Scroll to this item and press <Enter> and view the following screen:



IGD Memory (Auto)

This item shows the information of the IGD(Internal Graphics device) memory.

Initate Graphic Adapter (IGD)

This item allows you to select graphics controller to use as the primary boot device.

CrossFire (Enabled)

This item allows you to enable or disable crossfire function.

Press <Esc> to return to the Chipset Menu page.

► **South Bridge**

Scroll to this item and press <Enter> to view the following screen.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Main	Advanced	Chipset M.I.B.III Boot Security Save & Exit
SB Chipset Configuration		Enabled/Disabled Azalia HD Audio
Azalia HD Audio	[Enabled]	→ ←: Select Screen ↑↓/Click: Select Item Enter/Dbl Click : Select +/- : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC/Right Click: Exit
Azalia Internal HDMI codec	[Enabled]	
Restore AC Power Loss	[Power Off]	
Case Open Warning	[Disabled]	
Chassis Opened	[Enabled]	
Version 2.13.1216. Copyright (C) 2011 American Megatrends, Inc.		

Azalia HD Audio (Enabled)

This item enables or disables Azalia HD audio.

Azalia Internal HDMI codec (Enabled)

This item enables or disables Azalia Internal HDMI codec.

Restore AC Power Loss (Power Off)

This item specifies what state to go to when power is re-applied after a power failure (G3 state).

Case Open Warning (Disabled)

This item enables or disables the warning if the case is opened up, and the item below indicates the current status of the case.

Chassis Opened (Enabled)

This item indicates whether the case has been opened.

Press <Esc> to return to the Chipset Menu page.

M.I.B.III (MB Intelligent BIOS III) Menu

This page enables you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.						
Main	Advanced	Chipset	M.I.B.III	Boot	Security	Save & Exit
CPU Ratio/Voltage				[Auto]	<div>→ ←: Select Screen ↑↓/Click: Select Item Enter/Dbl Click : Select +/- : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC/Right Click: Exit</div>	
Memory Clock				[Auto]		
Memory Mode				[Auto]		
Memory Clock DCT0 is :				(DDR-1333/667Mhz)		
Memory Clock DCT1 is :				None		
CAS# Latency (tCL)				9 CLK		
RAS# to CAS# Delay (tRCD)				9 CLK		
Row Precharge Time (tRP)				9 CLK		
RAS# Active Time (tRAS)				24 CLK		
CPU Over-clocking Func.				[Disabled]		
IGD Over-clocking Func.				[Disabled]		
Version 2.13.1216. Copyright (C) 2011 American Megatrends, Inc.						

CPU Ratio/Voltage (Auto)

This item is used to set the CPU Ratio/Voltage.

Memory Clock (Auto)

This item is used to set the memory clock.

Memory Mode (Auto)

This item is used to set the memory Mode.

Memory Clock DCT0 is (DDR-1333/667Mhz)

This item shows current memory clock of DCT0.

Memory Clock DCT1 is (None)

This item shows current memory clock of DCT1.

CAS#Latency(tcl) (9CLK)

This item determines the operation of DDR SDRAM memory CAS (column address strobe). It is recommended that you leave this item at the default value. The 2T setting requires faster memory that specifically supports this mode.

RAS# to CAS# Delay(tRD) (9CLK)

This item specifies the RAS# to CAS# delay to Rd/Wr command to the same bank.

Row Precharge Time(tRP) (9CLK)

This item specifies Row precharge to Active or Auto-Refresh of the same bank.

RAS# Active Time(tRAS) (24CLK)

This item specifies the RAS# active time.

CPU Over-clocking Func. (Disabled)

This item enables or disables CPU over-clocking function.

IGD Over-clocking Func. (Disabled)

This item enables or disables IGD over-clocking function.

Press <Esc> to return to the M.I.B.III Menu page.

Boot Menu

This page enables you to set the keyboard NumLock state.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Main	Advanced	Chipset M.I.B.III Boot Security Save & Exit
Boot Configuration		Select the keyboard NumLock state
Bootup NumLock State [On]		
Set Boot Priority		
1st Boot	[Hard Disk]	
2nd Boot	[CD/DVD]	
3rd Boot	[USB Floppy/Floppy]	
4th Boot	[USB CD/DVD]	
5th Boot	[USB Hard Disk]	
6th Boot	[USB KEY]	
7th Boot	[Network]	
8th Boot	[UEFI]	
► CD/DVD ROM Drive Priorities		→ ←: Select Screen
► Hard Disk Drive Priorities		↑↓/Click: Select Item
► USB Floppy/Floppy Drive Priorities		Enter/Dbl Click : Select
► USB CD/DVD ROM Drive Priorities		+/- : Change Opt.
► USB HardDisk Drive Priorities		F1: General Help
► USB KEY Drive Priorities		F2: Previous Values
► NETWORK Device Priorities		F3: Optimized Defaults
► UEFI Boot Drive Priorities		F4: Save & Exit
		ESC/Right Click: Exit
Version 2.13.1216. Copyright (C) 2011 American Megatrends, Inc.		

Boot Configuration

This item shows the information of the Boot Configuration.

Bootup NumLock State (On)

This item enables you to select NumLock state.

Set Boot Priority

This item enables you to select boot priority for all boot devices.

1st/2nd/3rd/4th/5th/6th/7th/8th Boot

These items shows the boot priorities.

CD/DVD ROM Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing CD/DVD ROM drives.

Hard Disk Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing hard disk drives.

USB Floppy/Floppy Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing USB Floppy/Floppy drives.

USB CD/DVD ROM Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing USB CD/DVD ROM drives.

USB HardDisk Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing USB HardDisk drives.

USB KEY Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing USB KEY drives.

Network Device Priorities

This item enables you to specify the sequence of loading the operating system from the installing network devices.

UEFI Boot Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing UEFI Boot drives.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Main	Advanced	Chipset M.I.B.III Boot Security Save & Exit
Boot Option #1	[SATA: WDC WD5000AA...]	Select the keyboard NumLock state
		→ ←: Select Screen ↑↓/Click: Select Item Enter/Dbt Click : Select +/- : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC/Right Click: Exit
Version 2.13.1216. Copyright (C) 2011 American Megatrends, Inc.		

Security Menu

This page enables you to set setup administrator password and user password.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.	
Main Advanced Chipset M.I.B.I.II Boot Security Save & Exit	
Administrator Password	Set Setup Administrator Password
	→ ←: Select Screen ↑↓/Click: Select Item Enter/DbI Click : Select +/- : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC/Right Click: Exit
Version 2.13.1216. Copyright (C) 2011 American Megatrends, Inc.	

Administrator Password

Press <Enter> to setup administrator password.

Save & Exit Menu

This page enables you to exit system setup after saving or without saving the changes.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.						
Main	Advanced	Chipset	M.I.B.III	Boot	Security	Save & Exit
<div>Save Changes and Exit</div> <div>Discard Changes and Exit</div> <div>Save Changes and Reset</div> <div>Discard Changes and Reset</div> <div>Save Options</div> <div>Save Changes</div> <div>Discard Changes</div> <div>Restore Defaults</div> <div>Save as User Defaults</div> <div>Restore User Defaults</div> <div>Boot Override</div> <div>SATA: WDC WD5000AAKX-001CA0</div>						<div>Exit system setup after saving the changes.</div>
						<div>→ ←: Select Screen</div> <div>↑↓/Click: Select Item</div> <div>Enter/Dbl Click : Select</div> <div>+/- : Change Opt.</div> <div>F1: General Help</div> <div>F2: Previous Values</div> <div>F3: Optimized Defaults</div> <div>F4: Save & Exit</div> <div>ESC/Right Click: Exit</div>
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Save Changes and Exit

This item enables you to exit system setup after saving the changes.

Discard Changes and Exit

This item enables you to exit system setup without saving any changes.

Save Changes and Reset

This item enables you to reset the system setup after saving the changes.

Discard Changes and Reset

This item enables you to reset system setup without saving any changes.

Save Options

This item enables you to save the options that you have made.

Save Changes

This item enables you to save the changes that you have made.

Discard Changes

This item enables you to discard any changes that you have made.

Restore Defaults

This item enables you to restore the system defaults.

Save as User Defaults

This item enables you to save the changes that you have made as user defaults.

Restore User Defaults

This item enables you to restore user defaults to all the setup options.

Boot Override

This item enables you to set the device order.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.

Main

Advanced

Chipset

M.I.B.III

Boot

Security

Save & Exit

Save Changes and Exit

Discard Changes and Exit

Save Changes and Reset

Discard Changes and Reset

Save Options

Save Changes

Discard Changes

Restore Defaults

Save as User Defaults

Restore User Defaults

Boot Override

Generic Storage Device 0.00

Load Optimized Defaults

Load Optimized Defaults?

Yes

No

Exit system setup after saving the changes.

→ ←: Select Screen

↑↓/Click: Select Item

Enter/Dbl Click : Select

+/- : Change Opt.

F1: General Help

F2: Previous Values

F3: Optimized Defaults

F4: Save & Exit

ESC/Right Click: Exit

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Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.

Main

Advanced

Chipset

M.I.B.III

Boot

Security

Save & Exit

Save Changes and Exit

Discard Changes and Exit

Save Changes and Reset

Discard Changes and Reset

Save Options

Save Changes

Discard Changes

Restore Defaults

Save as User Defaults

Restore User Defaults

Boot Override

Generic Storage Device 0.00

Save & Exit Setup

Save configuration and exit?

Yes

No

Exit system setup after saving the changes.

→ ←: Select Screen

↑↓/Click: Select Item

Enter/Dbl Click : Select

+/- : Change Opt.

F1: General Help

F2: Previous Values

F3: Optimized Defaults

F4: Save & Exit

ESC/Right Click: Exit

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If the following picture appears when entering the setup utility, you can use the mouse or the keyboard to operate.



Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Web site. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

- 1 If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing.
- 2 If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.)
- 3 Prepare a bootable device or create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
- 4 Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the bootable device.
- 5 Turn off your computer and insert the bootable device in your computer. (You might need to run the Setup Utility and change the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the bootable device first.)
- 6 At the C:\ or A:\ prompt, type the Flash Utility program name and the file name of the new BIOS and then press <Enter>. Example: AFUDOS.EXE 040706.ROM
- 7 When the installation is complete, remove the bootable device from the computer and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the motherboard.

Using BIOS

Memo

Chapter 4

Using the Motherboard Software

About the Software DVD-ROM/CD-ROM

The support software DVD-ROM/CD-ROM that is included in the motherboard package contains all the drivers and utility programs needed to properly run the bundled products. Below you can find a brief description of each software program, and the location for your motherboard version. More information on some programs is available in a README file, located in the same directory as the software. Before installing any software, always inspect the folder for files named README.TXT or something similar. These files may contain important information that is not included in this manual.

1. Never try to install all software from folder that is not specified for use with your motherboard.
2. The notice of Intel HD Audio Installation (optional): The Intel High Definition audio functionality unexpectedly quits working in Windows Server 2003 Service Pack 1 or Windows XP Professional x64 Edition. Users need to download and install the update packages from the Microsoft Download Center “**before**” installing HD audio driver bundled in the driver disk. Please log on to <http://support.microsoft.com/default.aspx?scid=kb;en-us;901105#appliesto> for more information.

Auto-installing under Windows XP/Vista/7

The Auto-install DVD-ROM/CD-ROM makes it easy for you to install the drivers and software for your motherboard.



If the Auto-install DVD-ROM/CD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Refer to the Utility Folder Installation Notes later in this chapter.

The support software DVD-ROM/CD-ROM disc loads automatically under Windows XP/Vista/7. When you insert the DVD-ROM/CD-ROM disc in the DVD-ROM/CD-ROM drive, the autorun feature will automatically bring up the install screen. The screen has four buttons on it, Setup, Utilities, Browse CD and Exit.



* For reference only



If the opening screen does not appear; double-click the file “setup.exe” in the root directory.

Using the Motherboard Software

Drivers

Setup	Click the Setup button to run the software installation program. Select from the menu which software you want to install.
Utilities	Click the Utilities button to display the application software and other software utilities that are available on the disk. Select the software you want to install then follow installation procedure.
Browse CD	<p>The Browse CD button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support disk.</p> <p>Before installing the software from Windows Explorer, look for a file named README.TXT or something similar. This file may contain important information to help you install the software correctly.</p> <p>Some software is installed in separate folders for different operating systems.</p> <p>In installing the software, execute a file named SETUP.EXE by double-clicking the file and then following the instructions on the screen.</p>
Exit	The EXIT button closes the Auto Setup window.

Utilities

Lists the software utilities that are available on the disk.

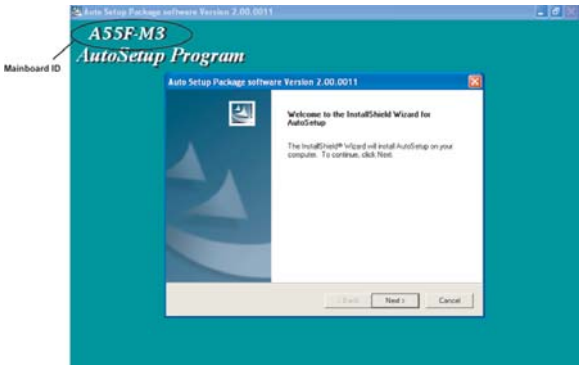
Information

Displays the path for all software and drivers available on the disk.

Running Setup

Follow these instructions to install device drivers and software for the motherboard:

- 1. Click **Setup**. The installation program begins:

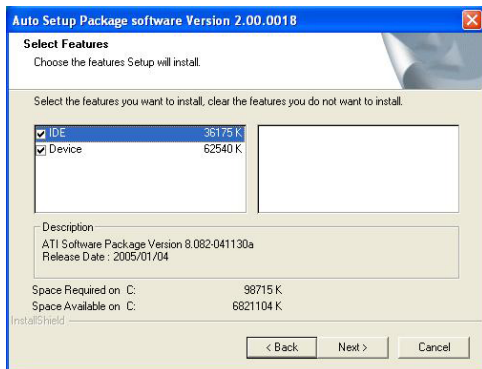


The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

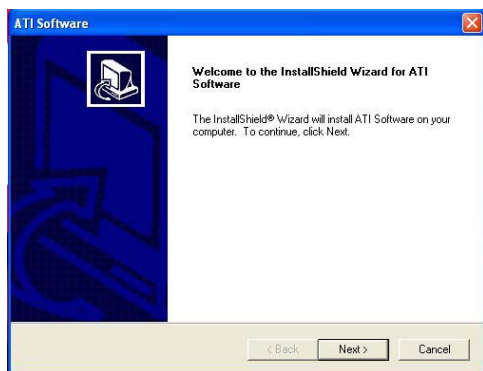
The motherboard identification is located in the upper left-hand corner.

Using the Motherboard Software

2. Click **Next**. The following screen appears:



3. Check the box next to the items you want to install. The default options are recommended.
4. Click **Next** run the Installation Wizard. An item installation screen appears:



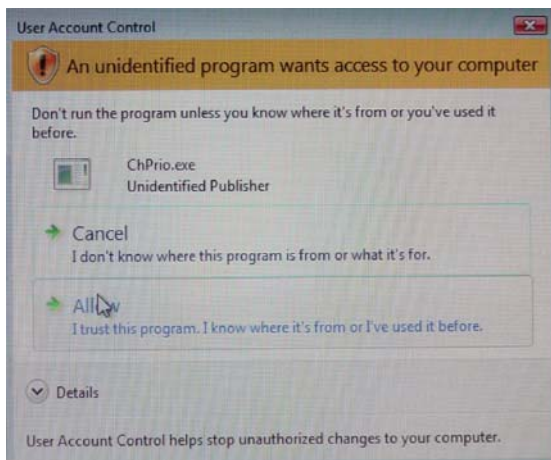
5. Follow the instructions on the screen to install the items.



Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm commands and allow the computer to restart a few times to complete the installation.



Windows Vista/7 will appear below UAC (User Account Control) message after the system restart. You must select “Allow” to install the next driver. Continue this process to complete the drivers installation.



Manual Installation

Insert the disk in the DVD-ROM/CD-ROM drive and locate the PATH.DOC file in the root directory. This file contains the information needed to locate the drivers for your motherboard.

Look for the chipset and motherboard model; then browse to the directory and path to begin installing the drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

Utility Software Reference

All the utility software available from this page is Windows compliant. They are provided only for the convenience of the customer. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.



These software(s) are subject to change at anytime without prior notice. Please refer to the support disk for available software.

Using the Motherboard Software

Chapter 5

CrossFire™ Technology (AMD Dual Graphics) Support

CrossFire™ Technology

The CrossFire™ technology provides significant display performance boost to AMD-based systems by inserting the external PCI Express graphics card and enabling both the discrete GPU and the AMD A55 graphics core to render simultaneously in CrossFire™ mode.

Follow the steps below to start the CrossFire™ technology.

- 1. Insert a graphics card (which can be used for CrossFire™ technology, such as HD6670 series) into the **PCIEX16** slot.

Make sure that the card is properly seated on the slot.

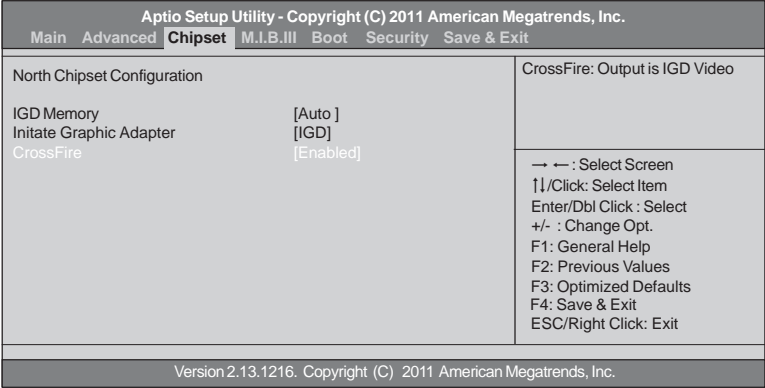


* For reference only

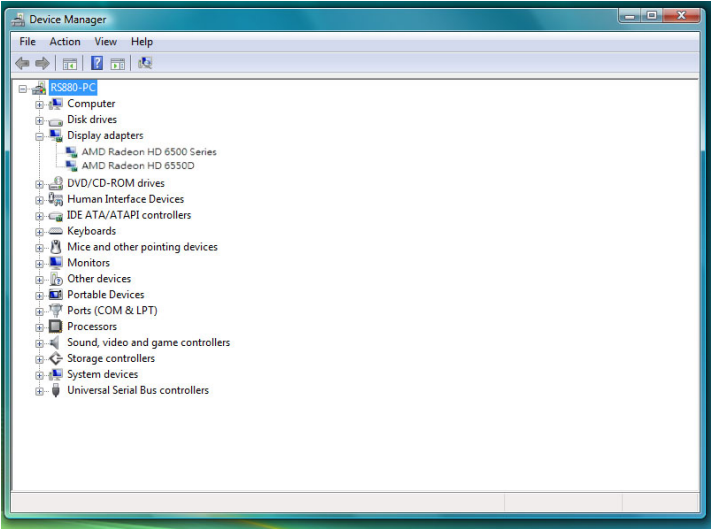
- 2. For CrossFire™, you must enter the BIOS, set the *Initate Graphic Adapter* in *Advanced Menu* to **IGD**. Then press F4 to save the configuration and exit the BIOS.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Main	Advanced	Chipset
M.I.B.III	Boot	Security
Save & Exit		
North Chipset Configuration		CrossFire: Output is IGD Video
IGD Memory	[Auto]	
Initate Graphic Adapter	[IGD]	
CrossFire	[Enabled]	
		→ ← : Select Screen ↑ ↓ / Click: Select Item Enter / Dbl Click : Select + / - : Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC / Right Click: Exit
Version 2.13.1216. Copyright (C) 2011 American Megatrends, Inc.		

3. Set the *CrossFire* in *Advanced Menu* to **Enabled**. Then press F4 to save the configuration and exit the BIOS.



4. Click with your right mouse button on *My Computer*, then click the option *Manage* and choose the *Device Manager*, finally, click the Display Adapters. The following screen appears. Be sure that the External ATI graphics (ATI Radeon HD 6670) and Onboard graphics (Radeon HD 6530D or HD6550D) are both displaying in the Display adapters.



Supported DUAL Graphics Combinations

"Lynx" Platform

DISCRETE GPU			DESKTOP APU		
Discrete Graphics Product	Radeon™ Brand	Frame Buffer	A4-Series "WinterPark" HD 6410D	A6-Series "BeaverCreek" HD 6530D	A8-Series "BeaverCreek" HD 6550D
Desktop Configurations					
Turks XT	HD6670	GDDR5	Attach Only (No DG)	HD 6690D2	HD 6690D2*
Turks Pro	HD6570	DDR3	Attach Only (No DG)	HD 6610D2*	HD 6630D2*
Caicos	HD6450	GDDR5	HD 6510D2*	HD 6550D2	HD 6550D2
Cedar	HD6350	DDR3	HD 6430D2	Attach Only (No DG)	Attach Only (No DG)

"Attach Only (No DG)" Indicates supported discrete graphics attachment without Dual Graphics.

"HD 6XXXX2" Indicates Dual-Graphics is supported with the resulting Dual-Graphics model number

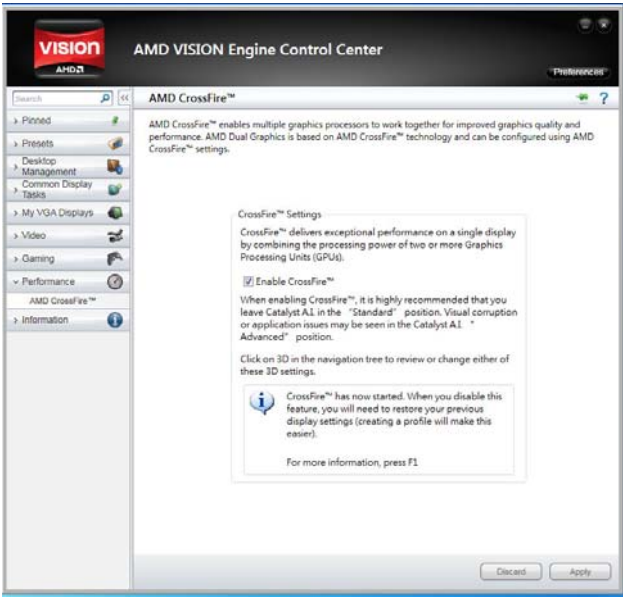
* Recommended discrete graphics combinations

E-Series products do not support Dual Graphics



Please reference latest AMD Dual Graphics® Technology Graphic Card support list on AMD official website and subject to change without notice.

5. Enter AMD VISION Engine Control Center, you can see the option of *CrossFire™*, click it and select *Enable CrossFire™*, then CrossFire™ starts.



To disable CrossFire™, please make sure to cancel Enable CrossFire™ in Catalyst Control Center firstly.

Recommendation

1.The APU in the A55 platform delivers a discrete-class of graphics performance and enables leading GPU compute capability

-Adding a discrete GPU is optional to extend graphics and GPU compute capacity

2.For optimal performance uplift, AMD recommends Dual Graphics (CrossFire™ Technology) combinations of

-A4 and Discrete GPU model Radeon HD6450

-A6 and Discrete GPU model Radeon HD6570

-A8 and Discrete GPU model Radeon HD6570 or HD6670

3.AMD recommends a balanced system memory configuration of at least 4GB of 1333-DDR3 (2GB x 2GB).

Single channel and unbalanced memory configuration can promise both APU and Dual Graphics performance.

4.CrossFire™ Technology (AMD Dual Graphics) Support on OS Windows 7 only due to the limitation by AMD.

Chapter 6

Setting Up AMD A55 RAID Configuration

Setting Up a bootable RAID Array

This section explains how to configure a bootable AMD RAID array.

Setting Up the BIOS

- 1 Start your computer, then press Delete to enter the BIOS setup.

The BIOS CMOS Setup Utility screen appears.

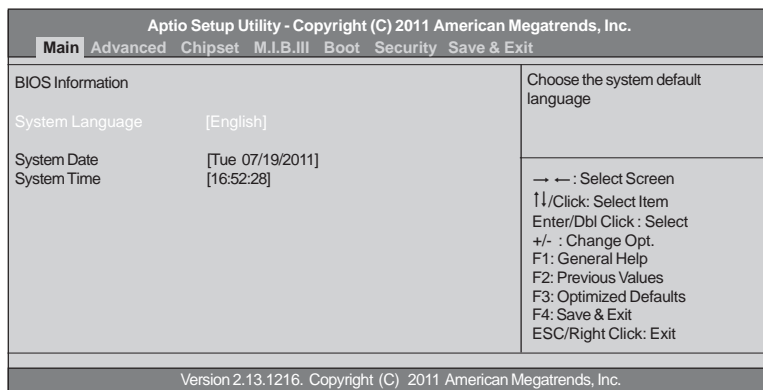


Figure 1.1 BIOS CMOS Setup Utility Main Screen

- 2 Use the arrow keys to select Advanced menu (see Figure 1.1), then select SATA Configuration and press Enter.

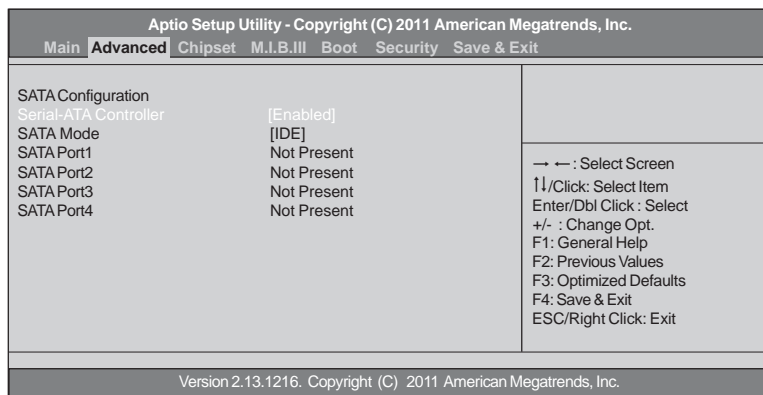


Figure 1.2 SATA Configuration Screen

- 3 Use the arrow keys to select the SATA Configuration (see Figure 1.2) and globally set SATA Configuration to RAID.

Setting Up AMD A55 RAID Configuration

- 4 Press F4 to save the configuration and exit.
The PC reboots.
- 5 Enter the RAID BIOS Setup by pressing Ctrl-F when prompted, and proceed to set up the AMD RAID BIOS as described in the next section.

Configuring the AMD RAID BIOS (Windows XP Installation)

The AMD RAID BIOS set up lets you choose the RAID type and which hard drives you want to make part of the array.

Entering the RAID BIOS Setup:

- 1 Wait until you see the RAID software prompting you to press Ctrl-F.

The RAID prompt appears as part of the system POST and boot process prior to loading of the OS. You have a few seconds to press Ctrl-F before the screen disappears.

- 2 Press Ctrl-F.

The Main Menu screen appears (Figure 1.3).

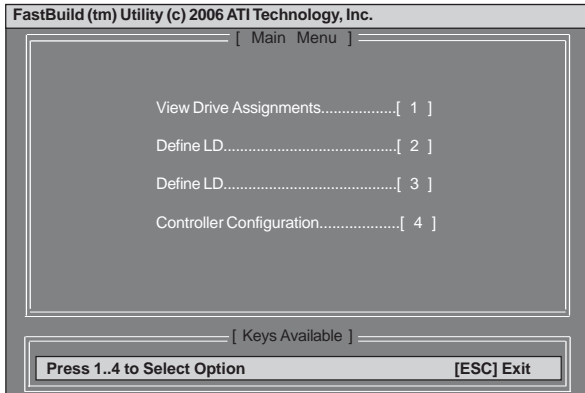


Figure 1.3 Main Menu

- 3 Select [2], then select LD 1 in the following page.

The Define LD Menu screen appears (Figure 1.4).

FastBuild (tm) Utility (c) 2006 ATI Technology, Inc.

[Define LD Menu]

LD No	RAID Mode	Total Drv
LD 1	RAID 0	0

Stripe Block : 64 KB

Gigabyte Boundary : ON

Past Init : OFF

Cache Mode : WriteThru

[Drives Assignments]

Channel : ID	Drive Model	Capacity (MB)	Assignment
3 : Mas WDC	WD3200AAJS-22B4	320073	N
4 : Mas WDC	WD1600JS-22NVB1	160042	N

[Keys Available]

[I] Up [I] Down [ESC] Exit [Space] Change Option [Ctrl-Y] Save

Figure 1.4 Define LD Menu

Using the Define a New Array Screen

If necessary, press the tab key to move from field to field until the appropriate field is highlighted.



Note: If you want to use the function of the following RAID Mode, you have to install enough HDD.

RAID READY (1 piece of HDD); RAID 0,1 ,JBOD (2 or more pieces of HDD); RAID 0+1 (4 pieces of HDD)

- **Selecting the RAID Mode**

By default, this is set to Mirroring. To change to a different RAID mode, press the spacebar until the mode that you want appears in the RAID Mode box—RAID0/1/10/JBOD.

Note: Not all RAID levels are supported on all platforms.

- **Selecting the Stripe Block Size**

Stripe block size is given in kilobytes, and affects how data is arranged on the disk. It is recommended to leave this value at the default Optimal, which is 64KB, but the values can be 64 KB and 128 KB. When choose RAID 1, the Stripe block size is unchangeable.

Assigning the Disks

- 1. Select the Assignment to Y to designate a free disk to be used as a RAID array disk.

Figure 1.5 illustrates the Define a New Array screen after two disks have been assigned as RAID 0 array disks.

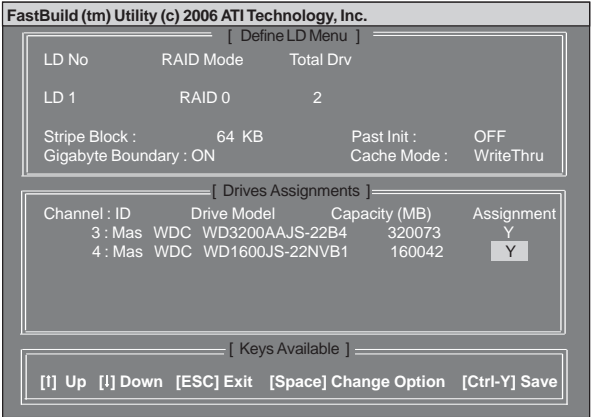


Figure 1.5 FastBuild Utility—Array Disks Assigned

- 2. Press Ctrl-Y to save the configuration and exit.

The Define LD Menu screen appears (Figure 1.6).

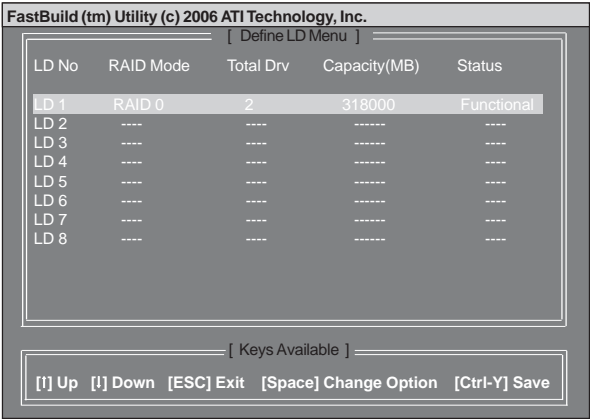


Figure 1.6 Define LD Menu

- 3. Press ESC to exit.

The Main Menu screen appears (Figure 1.7).

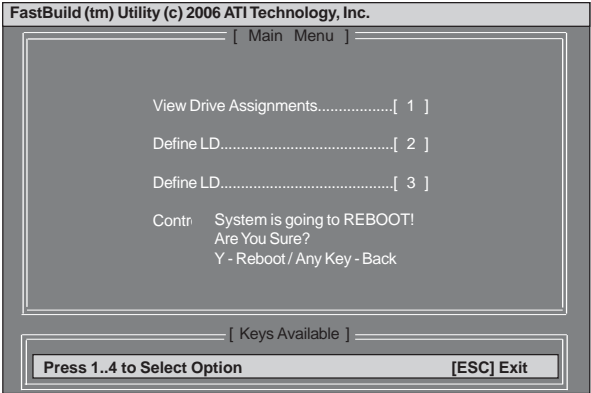


Figure 1.7 Main Menu

- 4 Press Y to reboot.

The following screen appears (Figure 1.8).

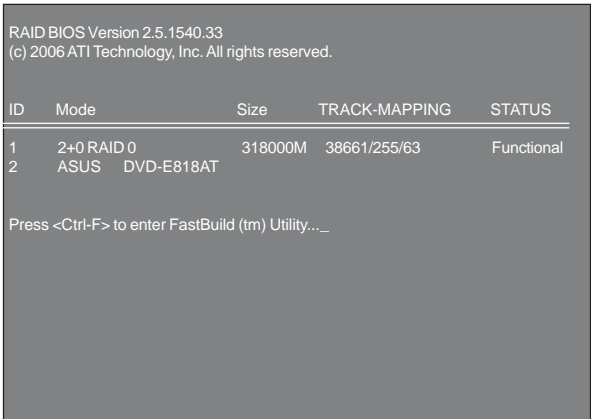


Figure 1.8

Installing the RAID Drivers

Your system may come with a Windows install CD that already includes AMD RAID drivers. If so, then this section is not relevant.

If that is not the case (or you are trying to install a new version of Windows), then you will need an AMD RAID driver F6 install floppy. Check to see if one came with your system. If not, you can create one by downloading the appropriate driver package and following the steps in this section.

- 1 Copy all files in "...\\RAID\\ATI\\A55\\Floppy\\Win3264" to a floppy disk.
- 2 After you complete the RAID BIOS setup, boot from the Windows CD.

The Windows Setup program starts.



Figure 1.9

- 3 Press F6 and wait a few moments for the Windows Setup screen to appear.

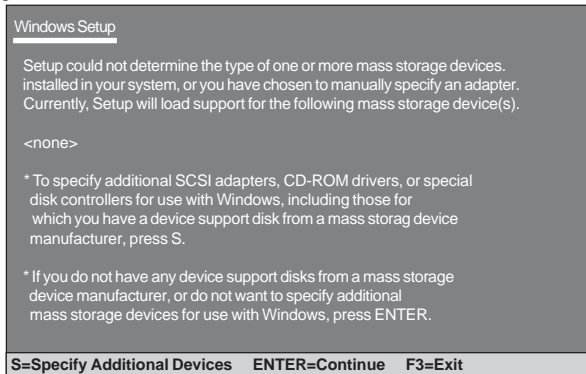


Figure 1.10 Windows Setup—Specify Devices

- 4 Specify the AMD drivers.
 - a Insert the floppy that has the RAID driver, press S, then press Enter.

Setting Up AMD A55 RAID Configuration

The following Windows Setup screen appears:

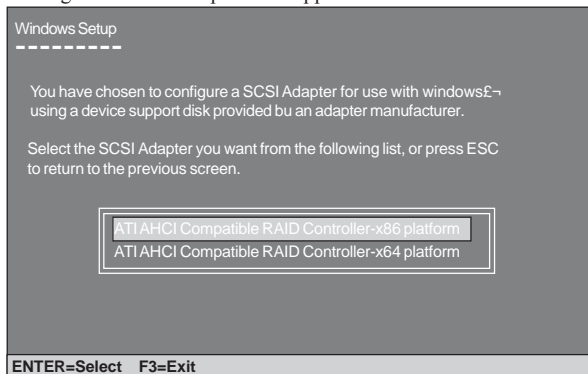


Figure 1.11 Windows Setup—Selected SCSI Adapter

- b Select “ATI AHCI Compatible RAID Controller-x86 platform” and press Enter for 32-bit OS or Select “ATI AHCI Compatible RAID Controller-x64 platform” and press Enter for 64-bit OS.

The following Windows Setup screen appears listing both drivers:.

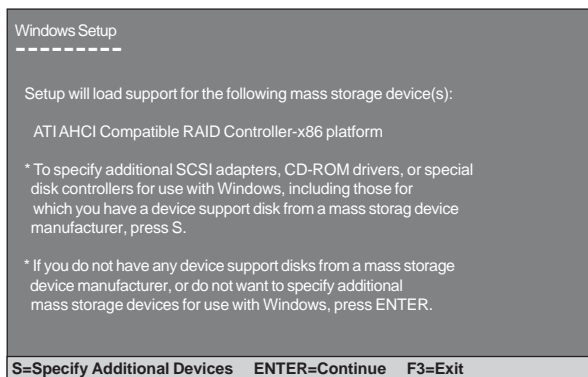


Figure 1.12 Windows Setup—AMD drives listed

- 5 Press Enter to continue with Windows XP Installation.

Be sure to leave the floppy disk inserted in the floppy drive until the blue screen portion of Windows XP installation is completed, then take out the floppy.

- 6 Follow the instructions on how to install Windows XP.

After Windows XP is completely installed, it is recommended that you install the ForceWare software in order to access the FastBuild RAID Management tool.

Note: Each time you add a new hard drive to a RAID array, the RAID driver will have to be installed under Windows once for that hard drive. After that, the driver will not have to be installed.

Setting Up AMD A55 RAID Configuration

Memo

Chapter 7

Trouble Shooting

Start up problems during assembly

After assembling the PC for the first time you may experience some start up problems. Before calling for technical support or returning for warranty, this chapter may help to address some of the common questions using some basic troubleshooting tips.

a) System does not power up and the fans are not running.

1. Disassemble the PC to remove the VGA adaptor card, DDR memory, LAN, USB and other peripherals including keyboard and mouse. Leave only the motherboard, CPU with CPU cooler and power supply connected. Turn on again to see if the CPU and power supply fans are running.
2. Make sure to remove any unused screws or other metal objects such as screwdrivers from the inside PC case. This is to prevent damage from short circuit.
3. Check the CPU FAN connector is connected to the motherboard.
4. For Intel platforms check the pins on the CPU socket for damage or bent. A bent pin may cause failure to boot and sometimes permanent damage from short circuit.
5. Check the 12V power connector is connected to the motherboard.
6. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

b) Power is on, fans are running but there is no display

1. Make sure the monitor is turned on and the monitor cable is properly connected to the PC.
2. Check the VGA adapter card (if applicable) is inserted properly.
3. Listen for beep sounds. If you are using internal PC speaker make sure it is connected.
 - a. continuous 3 short beeps : memory not detected
 - b. 1 long beep and 8 short beeps : VGA not detected

c) The PC suddenly shuts down while booting up.

1. The CPU may experience overheating so it will shutdown to protect itself. Ensure the CPU fan is working properly.

2. From the BIOS setting, try to disable the Smartfan function to let the fan run at default speed. Doing a Load Optimised Default will also disable the Smartfan.

Start up problems after prolong use

After a prolong period of use your PC may experience start up problems again. This may be caused by breakdown of devices connected to the motherboard such as HDD, CPU fan, etc. The following tips may help to revive the PC or identify the cause of failure.

1. Clear the CMOS values using the CLR_CMOS jumper. Refer to CLR_CMOS jumper in Chapter 2 for Checking Jumper Settings in this user manual. When completed, follow up with a Load Optimised Default in the BIOS setup.

2. Check the CPU cooler fan for dust. Long term accumulation of dust will reduce its effectiveness to cool the processor. Clean the cooler or replace a new one if necessary.

3. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

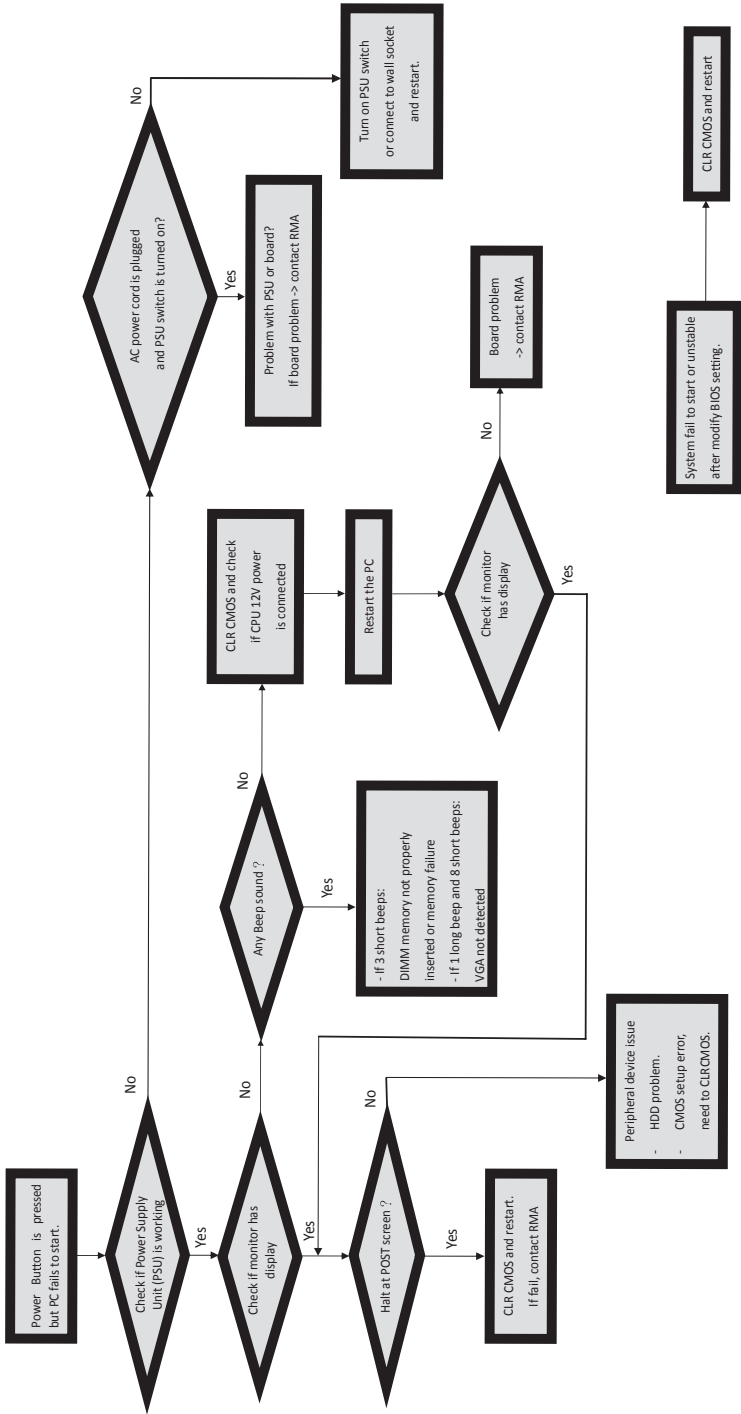
4. Remove the hard drive, optical drive or DDR memory to determine which of these components may be at fault.

Maintenance and care tips

Your computer, like any electrical appliance, requires proper care and maintenance. Here are some basic PC care tips to help prolong the life of the motherboard and keep it running as best as it can.

1. Keep your computer in a well ventilated area. Leave some space between the PC and the wall for sufficient airflow.
2. Keep your computer in a cool dry place. Avoid dusty areas, direct sunlight and areas of high moisture content.
3. Routinely clean the CPU cooler fan to remove dust and hair.
4. In places of hot and humid weather you should turn on your computer once every other week to circulate the air and prevent damage from humidity.
5. Add more memory to your computer if possible. This not only speeds up the system but also reduces the loading of your hard drive to prolong its life span.
6. If possible, ensure the power cord has an earth ground pin directly from the wall outlet. This will reduce voltage fluctuation that may damage sensitive devices.

Basic Troubleshooting Flowchart



Memo